

March 28, 2001

DIR-01-072

Dear Ms. Sihvola and Ms. Bernardi,

Dr. Shank has asked me to respond on the Laboratory's behalf to your letters of January 31 and March 19, 2001. Please accept Berkeley Lab's apology for not having replied earlier to your initial letter. We are responding now because we have been focusing on an analysis for siting additional ambient air monitoring stations. This information was needed in order to best respond to your comments about ambient air monitoring stations. In addition, we are in the process of seeking clarification from the San Francisco Regional Water Quality Control Board regarding its position about groundwater monitoring, which would be helpful to respond to your questions about this medium.

January 31, 2001 Letter

On March 22, 2001, the SENES draft report, *The Technical Basis for Siting Additional Ambient Air Monitoring Stations for the Measurement of Tritiated Water Vapor at Lawrence Berkeley Laboratory* was sent to all Task Force participants, including yourself. Please note that the existing ambient air sampling network not only meets all regulatory requirements but goes beyond those requirements. However, in response to recommendations made by the USEPA and the City of Berkeley's consultant, IFEU, and concerns raised by members of the Task Force, the Laboratory is planning a significant expansion to its ambient air monitoring network. In addition to the existing 7 stations, another 8 stations are planned. The rationale for siting was primarily based on the results of computer modeling using CALPUFF. The results of a UC Davis wind tunnel study and another computer model, CAP88-PC, were also used. A summary of these assessments will be presented by Dr. Owen Hoffman at the March 29th Task Force meeting.

The expansion of the ambient air network to 15 stations will have 7 stations located within 300 meters of the rooftop stack planned for Building 75. An additional benefit of the proposed expanded network is that the CALPUFF model can be calibrated to ambient air monitoring results for the wind directions and distances not directly covered by the monitoring stations. These calibrated estimates can be used to increase the confidence in predicted concentrations of HTO in downwind directions and distances not explicitly represented by an ambient air station, or where concentrations are below limits of detection.

With respect to groundwater monitoring, the Berkeley Lab is engaged in a comprehensive investigation, through its Environmental Restoration Program (ERP), that includes both groundwater and soil-pore water sampling. This investigation is designed to meet the requirements of the Resource Conservation and Recovery Act (RCRA), and has been conducted in accordance with these requirements for the past 10 years. Thorough review and approval of ERP activities has been provided by a number of regulatory agencies, including the Department of Toxic Substances Control, the Regional Water Quality Control Board (RWQCB), and the City's Toxics Management Division. Recommendations from these agencies have been addressed in the development of ERP work plans and investigation reports. Sampling results are published in quarterly progress reports and these are sent to the regulatory agencies and to the information repository at UC Berkeley's Doe Library.

At this point, it seems unlikely that there would be any added value to the incorporation of groundwater and soil-pore water sampling into the proposed tritium sampling plan which is being developed to meet Superfund requirements for site evaluation. For RCRA and Superfund purposes, samples are analyzed by the same techniques; however, quality assurance requirements are different for each law. Duplication of sampling performed for RCRA purposes merely in order to meet Superfund QA requirements would provide little or no new information at substantial additional cost. At an ERP meeting on October 18, 2000, the RWQCB agreed that the groundwater monitoring conducted through the RCRA process provides sufficient information concerning the level of tritium contamination. A letter was sent to the Board on February 20, 2001 that sought additional clarification; however, we have not received a response yet.

March 19, 2001

In regard to your requests for verification of the level of operations at the NTLF, we are unable to provide a schedule for all user operations for CY 2001. Some of the requested information regarding shipping documents has previously been provided to Bernd Franke, the City of Berkeley's consultant. We are attaching the remaining information, i.e., those shipping documents that have been created since information was provided to Bernd Franke in October of 2000. Note that names of individual recipients have been blacked out.

You also requested information about recent changes to the Overhoff system. In order to improve the performance and reliability of the Hillside Stack real-time monitoring system, Berkeley Lab reconfigured the system in 1999. The principal modifications included (1) the removal of 40-liter ion chambers (and related sampling equipment) which were not functional, complicated diagnosing system performance problems, and did not operate reliably, (2) the addition of a temperature-controlled environment for the 2-liter ion chamber detectors, and (3) simplification of air flow within the system. These changes reduced instrument false positive data (electrical spikes and thermal drift), increased system sensitivity and reliability, and simplified equipment operation and maintenance.

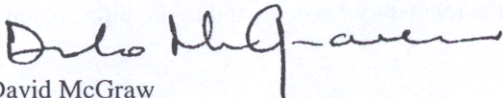
The raw data collected by the Hillside Stack real-time monitoring system includes an instrument background rate. In order to determine the instrument background rate, the monitoring system is periodically disconnected from the Hillside stack (during a period of NTLF inactivity) and the system is allowed to sample ambient air. Since ambient air tritium concentrations are orders of magnitude below the sensitivity of ion chamber detectors, the data collected while sampling ambient air is equivalent to the instrument background, typically about 0.02 mBq per cubic meter of air. That value does not correspond to an actual air concentration, but rather represents the zero point for instrument measurements. A computer program that calculates the real-time stack measurements subtracts the background value (0.02 mBq per cubic meter) from the gross raw data to give the correct net results.

As you are aware, the USEPA has already accepted the proposed soil, sediment, and surface water sampling locations. As discussed above, you should now also have received the SENES report on the technical basis for siting additional ambient air monitoring stations. This contains the CAP 88 and UC Davis Wind Tunnel data which you requested.

The agenda for the March 29th meeting was mailed to Task Force members and posted to the web two weeks prior to the meeting, as usual. Please understand that your request to place an item on the agenda could not be considered, since it was received after the agenda had been distributed. In regard to the content of the requested agenda item, please note that the Lab has already agreed to correlate stack emissions with sampling data, which is the most meaningful measure of the level of NTLF operations.

We trust you will agree that throughout this process the Lab has striven to be responsive to all Task Force members' requests for information, within the limits of time constraints, human capacity, and availability of information.

Sincerely,



David McGraw
Division Director, Environment, Health & Safety

Attachment

Tritium Documents Request of 3/19/2001

(a) Tritiated products shipped out of the NTLF, 5/2000 to present

Date	Consignee	Amount (Ci)
5/04/2000	LBNL Calvin Lab	0.2
5/10/2000	Roche Bioscience	0.75
5/10/2000	University of Toronto	0.05
5/11/2000	Martin Luther University	0.001
5/22/2000	UC Berkeley	0.001
5/24/2000	Princeton University	0.1
6/12/2000	UC Riverside	13
6/12/2000	UC Berkeley	0.01
6/21/2000	Chiron Corporation	0.01
7/11/2000	SRI International	0.013
7/18/2000	Toronto Research Chemicals	3.3
7/25/2000	Chiron Corporation	0.05
8/21/2000	Bristol -Myers Squibb	0.02
8/29/2000	Bristol -Myers Squibb	0.0075
8/29/2000	Multiple Peptide Systems	0.284
10/17/2000	Columbia University	0.01
11/20/2000	SRI International	2.7
11/29/2000	Multiple Peptide Systems	2.5
12/12/2000	SRI International	0.001
12/18/2000	Queens University	0.02
1/10/2001	Rutgers University	0.008
1/31/2001	Rutgers University	0.002
2/13/2001	Princeton University	0.006

(b) Tritium received by the NTLF, 10/2000 to present.

Date	Consignor	Activity (Ci)
1/16/2001	DOE Westinghouse - Savannah River	6983.39

(c) Tritium shipped from NTLF for recycling, 10/1998 to present - None

(d) NTLF Tritium shipped as waste from The HWHF, 3/1997 to present.
(Documents from 3/1997 to 4/2000 previously provided)

Date	Consignee	Activity (Ci)
6/01/2000	GTS Duratek	2.03
8/10/2000	Diversified Scientific Services	23.3
9/25/2000	GTS Duratek	0.51